

THAT WHICH IS CLAIMED:

1. An isolated nucleic acid molecule having a nucleotide sequence for a promoter that is capable of initiating transcription in a plant cell, wherein said nucleotide
5 sequence for said promoter is selected from the group consisting of:

a) a nucleotide sequence comprising the sequence set forth in SEQ ID NO:5 or SEQ ID NO:6;

b) a nucleotide sequence selected from the group consisting of the sequences deposited as Patent Deposit No. PTA-2182;

10 c) a nucleotide sequence comprising at least 30 contiguous nucleotides of the sequence set forth in SEQ ID NO:5 or SEQ ID NO:6;

d) a nucleotide sequence having at least 70% sequence identity to the nucleotide sequence set forth in SEQ ID NO:5 or SEQ ID NO:6;

15 e) a nucleotide sequence having at least 80% sequence identity to the nucleotide sequence set forth in SEQ ID NO:5 or SEQ ID NO:6;

f) a nucleotide sequence having at least 90% sequence identity to the nucleotide sequence set forth in SEQ ID NO:5 or SEQ ID NO:6; and

g) a nucleotide sequence that hybridizes under stringent conditions to the complement of a sequence of a), b), or c).

20

2. A DNA construct comprising a nucleotide sequence of claim 1 operably linked to a heterologous nucleotide sequence of interest.

3. A vector comprising the DNA construct of claim 2.

25

4. A host cell having stably incorporated in its genome the DNA construct of claim 2.

5. A method for inducing expression of a heterologous nucleotide sequence
30 in a plant, said method comprising the steps of transforming a plant cell with a DNA construct comprising said heterologous nucleotide sequence operably linked to a

promoter that is capable of initiating transcription in a plant cell in response to a stimulus, regenerating a stably transformed plant from said plant cell, and exposing said plant to said stimulus, wherein said promoter comprises a nucleotide sequence of claim 1.

5 6. The method of claim 5, wherein said plant is a monocot.

7. The method of claim 5, wherein said plant is a dicot.

8. The method of claim 7, wherein said dicot is sunflower.

10

9. A plant cell stably transformed with a DNA construct comprising a heterologous nucleotide sequence operably linked to a promoter that is capable of initiating transcription in said plant cell, wherein said promoter comprises a nucleotide sequence of claim 1.

15

10. A plant stably transformed with a DNA construct comprising a heterologous nucleotide sequence operably linked to a promoter that is capable of initiating transcription in a plant cell, wherein said promoter comprises a nucleotide sequence selected from the group consisting of:

20 a) a nucleotide sequence comprising the sequence set forth in SEQ ID NO:5 or SEQ ID NO:6;

 b) a nucleotide sequence selected from the group consisting of the sequences deposited as Patent Deposit No. PTA-2182;

 c) a nucleotide sequence comprising at least 30 contiguous
25 nucleotides of the sequence set forth in SEQ ID NO:5 or SEQ ID NO:6;

 d) a nucleotide sequence having at least 70% sequence identity to the nucleotide sequence set forth in SEQ ID NO:5 or SEQ ID NO:6;

 e) a nucleotide sequence having at least 80% sequence identity to the nucleotide sequence set forth in SEQ ID NO:5 or SEQ ID NO:6;

30 f) a nucleotide sequence having at least 90% sequence identity to the nucleotide sequence set forth in SEQ ID NO:5 or SEQ ID NO:6; and

g) a nucleotide sequence that hybridizes under stringent conditions to the complement of a sequence of a), b), or c).

5 11. The plant of claim 10, wherein said plant is a monocot.

12. The plant of claim 11, wherein said plant is a dicot.

13. The plant of claim 12, wherein dicot is sunflower.

10 14. Transformed seed of the plant of claim 10.

15 15. An isolated nucleic acid molecule having a nucleotide sequence selected from the group consisting of:

a) the sequence set forth in SEQ ID NO:1 or SEQ ID NO:3;

b) a nucleotide sequence selected from the group consisting of the sequences deposited as Patent Deposit No. PTA-2182;

c) a nucleotide sequence encoding the amino acid sequence set forth in SEQ ID NO:2 or SEQ ID NO:4;

20 d) a nucleotide sequence encoding the amino acid sequence encoded by a nucleotide sequence deposited as Patent Deposit No. PTA-2182;

e) a nucleotide sequence comprising at least 16 contiguous nucleotides of a nucleotide sequence of a), b), c), or d);

f) a nucleotide sequence having at least 70% identity with SEQ ID NO:1, wherein said nucleotide sequence encodes a polypeptide having chitinase activity;

25 g) a nucleotide sequence having at least 80% identity with SEQ ID NO:1, wherein said nucleotide sequence encodes a polypeptide having chitinase activity;

h) a nucleotide sequence having at least 90% identity with SEQ ID NO:1, wherein said nucleotide sequence encodes a polypeptide having chitinase activity;

30 i) a nucleotide sequence having at least 70% identity with SEQ ID NO:3, wherein said nucleotide sequence encodes a polypeptide having lipid transfer activity;

- j) a nucleotide sequence having at least 80% identity with SEQ ID NO:3, wherein said nucleotide sequence encodes a polypeptide having lipid transfer activity;
- k) a nucleotide sequence having at least 90% identity with SEQ ID NO:3, wherein said nucleotide sequence encodes a polypeptide having lipid transfer activity;
- l) a nucleotide sequence that hybridizes under stringent conditions to the complement of a sequence of a), b), c), d), or e); and
- m) the complement of a nucleotide sequence of a), b), c), d), e), f), g), h), i), j), k), or l).

16. A DNA construct comprising a nucleotide sequence of claim 15 operably linked to a promoter that drives expression in a plant cell.
17. A vector comprising the DNA construct of claim 16.
18. A host cell having stably incorporated in its genome the DNA construct of claim 16.
19. A method for creating or enhancing disease resistance in a plant, said method comprising transforming said plant with a DNA construct comprising a nucleotide sequence operably linked to a promoter that drives expression of a coding sequence in a plant cell and regenerating stably transformed plants, wherein said nucleotide sequence is selected from the nucleotide sequences of claim 15.
20. The method of claim 19, wherein said plant is a dicot.
21. The method of claim 20, wherein said dicot is sunflower.
22. The method of claim 19, wherein said promoter is an inducible promoter.

23. The method of claim 22 wherein said inducible promoter is selected from the group consisting of promoters for sunflower chitinase and sunflower LTP.

24. A plant cell stably transformed with a DNA construct comprising a
5 nucleotide sequence operably linked to a promoter that drives expression of a coding sequence in a plant cell, wherein said nucleotide sequence is selected from the nucleotide sequences of claim 15.

25. A plant stably transformed with a DNA construct comprising a nucleotide
10 sequence operably linked to a promoter that drives expression of a coding sequence in a plant cell, wherein said nucleotide sequence is selected from the group consisting of:

- a) the sequence set forth in SEQ ID NO:1 or SEQ ID NO:3;
- b) a nucleotide sequence selected from the group consisting of the sequences deposited as Patent Deposit No. PTA-2182;
- 15 c) a nucleotide sequence encoding the amino acid sequence set forth in SEQ ID NO:2 or SEQ ID NO:4;
- d) a nucleotide sequence encoding the amino acid sequence encoded by a nucleotide sequence deposited as Patent Deposit No. PTA-2182;
- e) a nucleotide sequence comprising at least 16 contiguous
20 nucleotides of a nucleotide sequence of a), b), c), or d);
- f) a nucleotide sequence having at least 70% identity with SEQ ID NO:1, wherein said nucleotide sequence encodes a polypeptide having chitinase activity;
- g) a nucleotide sequence having at least 80% identity with SEQ ID NO:1, wherein said nucleotide sequence encodes a polypeptide having chitinase activity;
- 25 h) a nucleotide sequence having at least 90% identity with SEQ ID NO:1, wherein said nucleotide sequence encodes a polypeptide having chitinase activity;
- i) a nucleotide sequence having at least 70% identity with SEQ ID NO:3, wherein said nucleotide sequence encodes a polypeptide having lipid transfer activity;

- j) a nucleotide sequence having at least 80% identity with SEQ ID NO:3, wherein said nucleotide sequence encodes a polypeptide having lipid transfer activity;
- k) a nucleotide sequence having at least 90% identity with SEQ ID NO:3, wherein said nucleotide sequence encodes a polypeptide having lipid transfer activity;
- l) a nucleotide sequence that hybridizes under stringent conditions to the complement of a sequence of a), b), c), d), or e); and
- m) the complement of a nucleotide sequence of a), b), c), d), e), f), g), h), i), j), k), or l).

26. Transformed seed of the plant of claim 25.

27. A substantially purified protein having an amino acid sequence selected from the group consisting of:

- a) the amino acid sequence set forth in SEQ ID NO:2 or SEQ ID NO:4;
- b) an amino acid sequence encoded by the nucleotide sequence deposited as Patent Deposit No. PTA-2182;
- c) an amino acid sequence that shares at least 70% sequence identity to the amino acid sequence set forth in SEQ ID NO:2, wherein said amino acid sequence has chitinase activity;
- d) an amino acid sequence that shares at least 70% sequence identity to the amino acid sequence set forth in SEQ ID NO:4, wherein said amino acid sequence has lipid transfer activity;
- e) an amino acid sequence encoded by the nucleotide sequence set forth in SEQ ID NO:1 or SEQ ID NO:3; and
- f) an amino acid sequence encoded by a nucleotide sequence that hybridizes under stringent conditions to the nucleotide sequence set forth in SEQ ID NO:1, wherein said amino acid sequence has chitinase activity; and

g) an amino acid sequence encoded by a nucleotide sequence that hybridizes under stringent conditions to the nucleotide sequence set forth in SEQ ID NO:3, wherein said amino acid sequence has lipid transfer activity.

5 28. A composition comprising the protein of claim 27 and a carrier.

29. The composition of claim 28, wherein said carrier is selected from a surface active agent, an inert carrier, an encapsulating agent, and an agrochemical.

10 30. The composition of claim 28, wherein said carrier is a pharmaceutical carrier.

15 31. A method for controlling a plant pathogen, said method comprising applying an anti-pathogenic amount of the protein of claim 27 to the environment of said pathogen.

32. The method of claim 31 wherein said anti-pathogenic amount of said protein is applied to a plant.

20 33. The method of claim 31 wherein said anti-pathogenic amount of said protein is applied by a procedure selected from the group consisting of spraying, dusting, scattering, and seed coating.

25 34. A method for controlling a plant pathogen comprising applying an anti-pathogenic amount of the composition of claim 28 to the environment of said pathogen.